



EMH2801

MOSFET : P-Channel Silicon MOSFET
SBD : Schottky Barrier Diode

General-Purpose Switching Device Applications

Features

- Composite type with a P-Channel Silicon MOSFET and a Schottky Barrier Diode contained in one package facilitating high-density mounting
- [MOSFET]
 - Low ON-resistance
 - Small switching noise
 - Halogen free compliance
- [SBD]
 - 1.8V drive
 - Low forward voltage ($I_F=2.0A$, $V_F \text{ max}=0.46V$)

Specifications

Absolute Maximum Ratings at $T_a=25^\circ C$

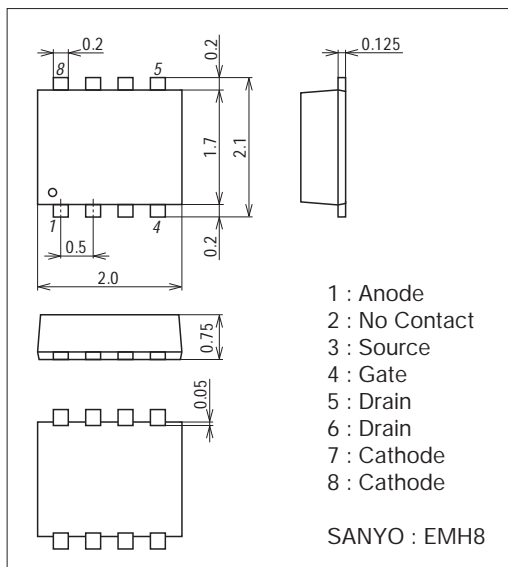
Parameter	Symbol	Conditions	Ratings	Unit
[MOSFET]				
Drain-to-Source Voltage	V_{DSS}		-20	V
Gate-to-Source Voltage	V_{GSS}		± 10	V
Drain Current (DC)	I_D		-3	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	-20	A
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (900mm ² ×0.8mm) 1unit	1.0	W
Channel Temperature	T_{ch}		150	°C
Storage Temperature	T_{stg}		-55 to +125	°C

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Package Dimensions

unit : mm (typ)

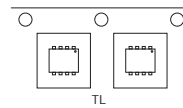
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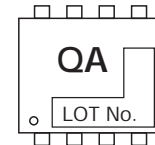
Product & Package Information

- Package : EMH8
- JEITA, JEDEC : -
- Minimum Packing Quantity : 3,000 pcs./reel

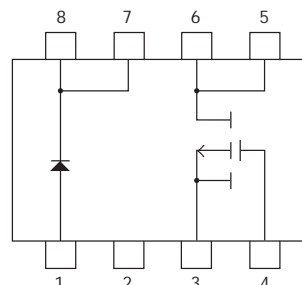
Packing Type : TL



Marking



Electrical Connection



EMH2801

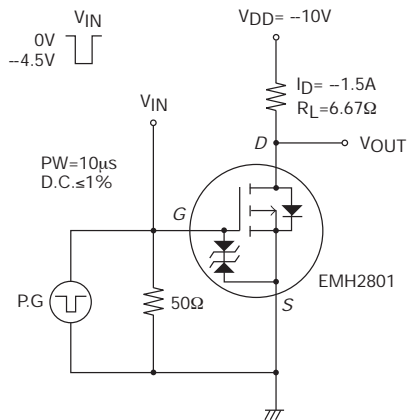
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Parameter	Symbol	Conditions	Ratings	Unit
[SBD]				
Repetitive Peak Reverse Voltage	VRRM		15	V
Nonrepetitive Peak Reverse Surge Voltage	VRSM		15	V
Average Output Current	IO	Rectangular wave	2.0	A
Surge Forward Current	IFSM	50Hz sine wave, 1 cycle	20	A
Junction Temperature	TJ		-55 to +125	°C
Storage Temperature	Tstg		-55 to +125	°C

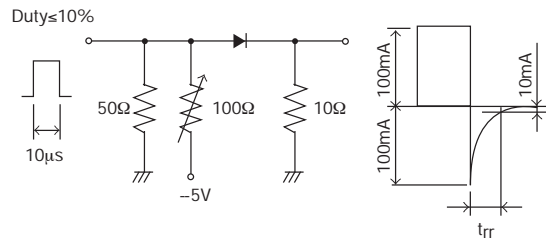
Electrical Characteristics at Ta=25°C

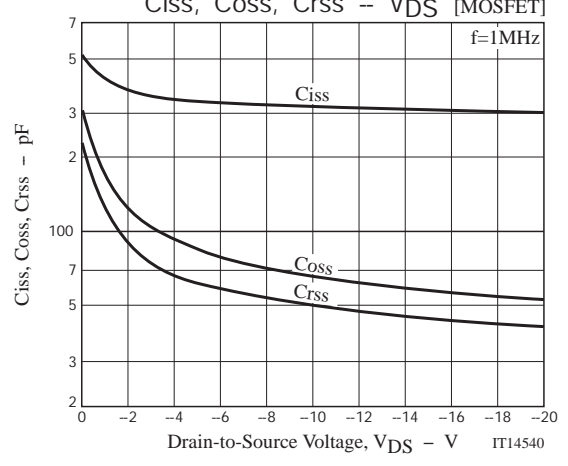
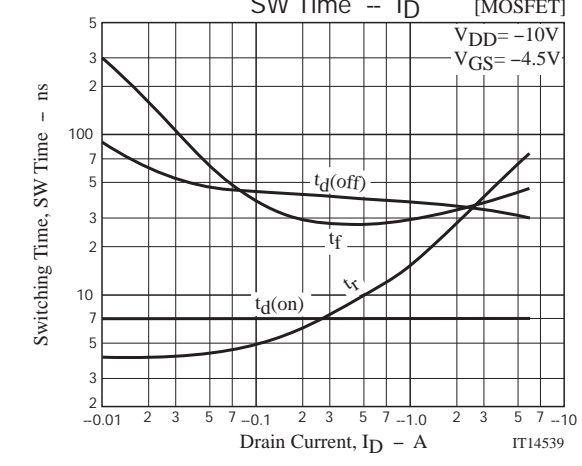
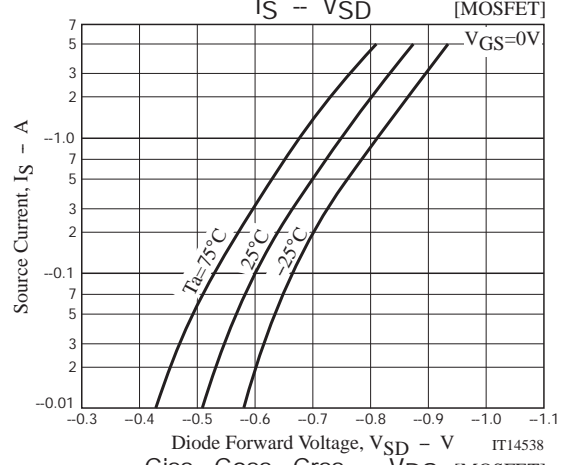
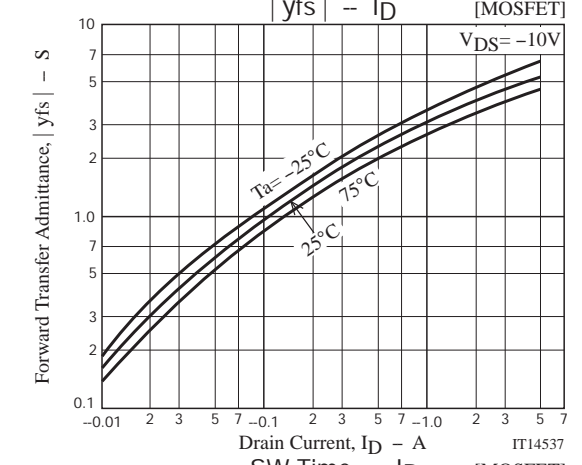
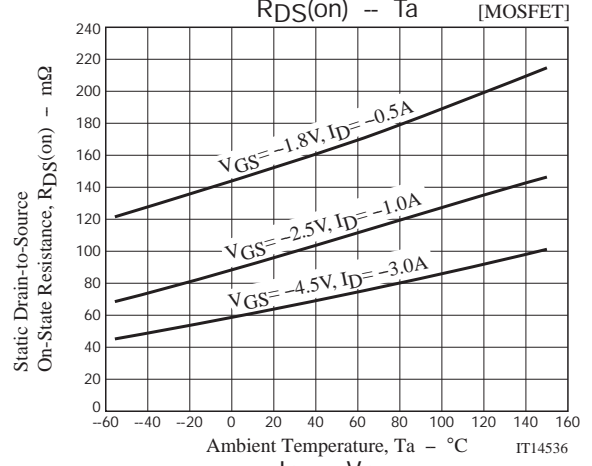
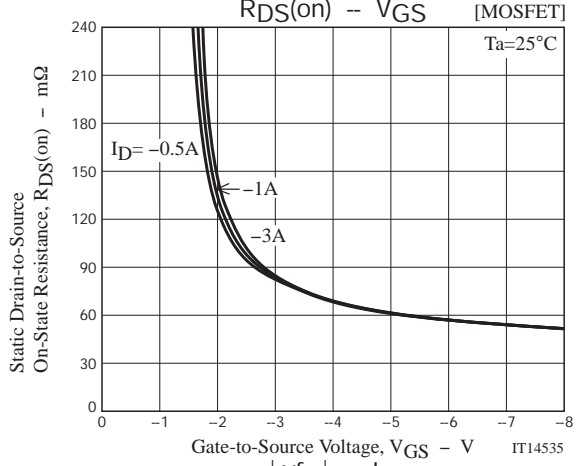
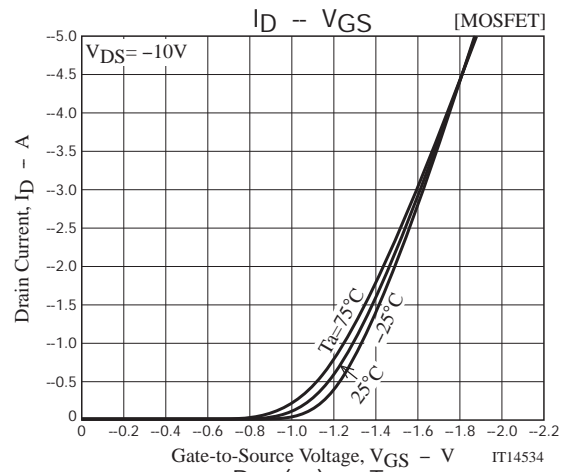
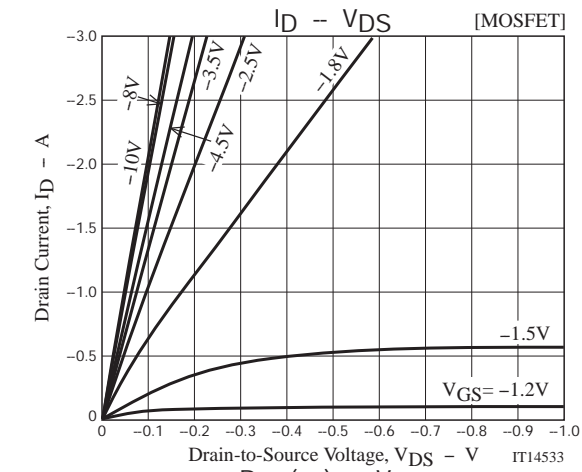
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[MOSFET]						
Drain-to-Source Breakdown Voltage	V(BR)DSS	ID=-1mA, VGS=0V	-20			V
Zero-Gate Voltage Drain Current	IDSS	VDS=-20V, VGS=0V			-1	µA
Gate-to-Source Leakage Current	IGSS	VGS=±8V, VDS=0V			±10	µA
Cutoff Voltage	VGS(off)	VDS=-10V, ID=-1mA	-0.4		-1.3	V
Forward Transfer Admittance	yfs	VDS=-10V, ID=-1.5A		3.6		S
Static Drain-to-Source On-State Resistance	RDS(on)1	ID=-1.5A, VGS=-4.5V		65	85	mΩ
	RDS(on)2	ID=-1A, VGS=-2.5V		98	137	mΩ
	RDS(on)3	ID=-0.5A, VGS=-1.8V		155	235	mΩ
Input Capacitance	Ciss	VDS=-10V, f=1MHz		320		pF
Output Capacitance	Coss	VDS=-10V, f=1MHz		66		pF
Reverse Transfer Capacitance	Crss	VDS=-10V, f=1MHz		50		pF
Turn-ON Delay Time	td(on)	See specified Test Circuit.		7.1		ns
Rise Time	tr	See specified Test Circuit.		21		ns
Turn-OFF Delay Time	td(off)	See specified Test Circuit.		37		ns
Fall Time	tf	See specified Test Circuit.		32		ns
Total Gate Charge	Qg	VDS=-10V, VGS=-4.5V, ID=-3A		4.0		nC
Gate-to-Source Charge	Qgs	VDS=-10V, VGS=-4.5V, ID=-3A		0.6		nC
Gate-to-Drain "Miller" Charge	Qgd	VDS=-10V, VGS=-4.5V, ID=-3A		1.1		nC
Diode Forward Voltage	VSD	IS=-3A, VGS=0V		-0.83	-1.2	V
[SBD]						
Reverse Voltage	VR	IR=1mA	15			V
Forward Voltage	VF1	IF=1.0A		0.33	0.39	V
	VF2	IF=2.0A		0.39	0.46	V
Reverse Current	IR	VR=7.5V			300	µA
Interterminal Capacitance	C	VR=10V, f=1MHz		35		pF

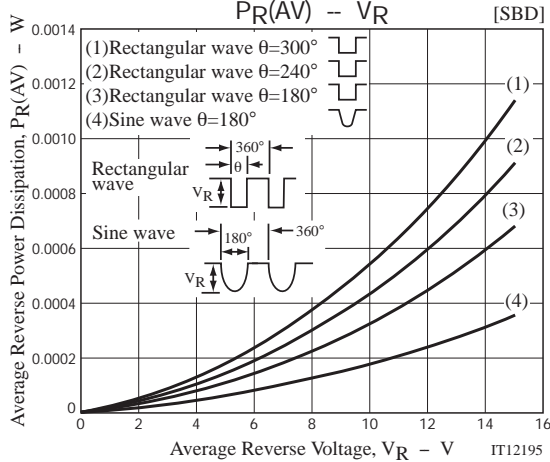
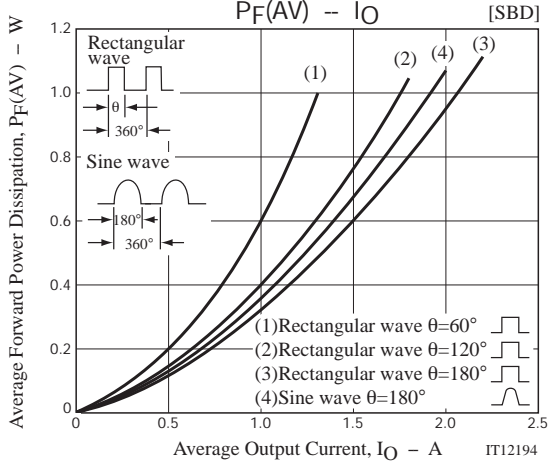
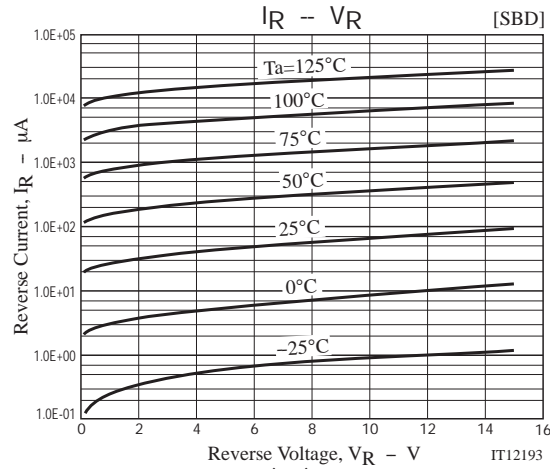
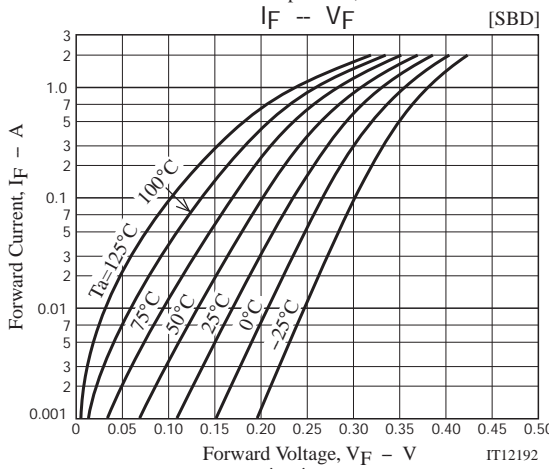
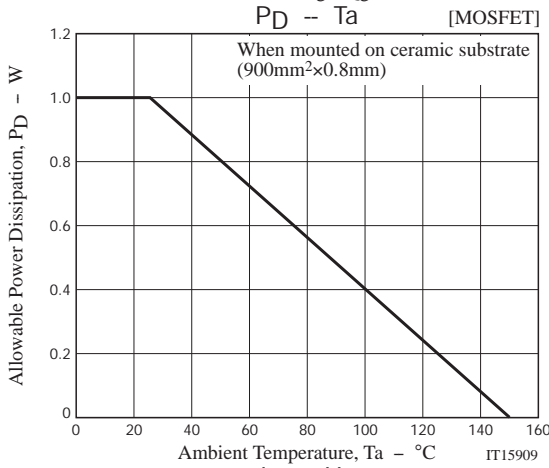
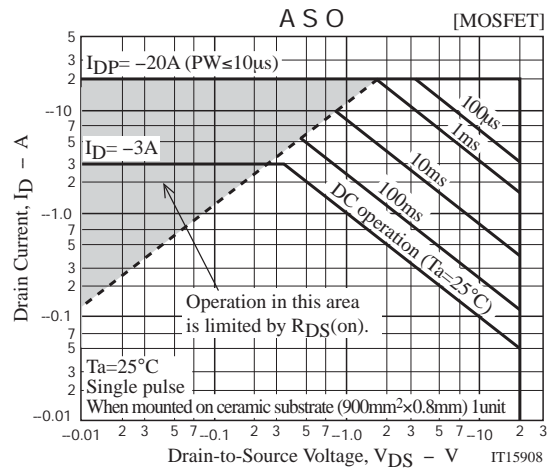
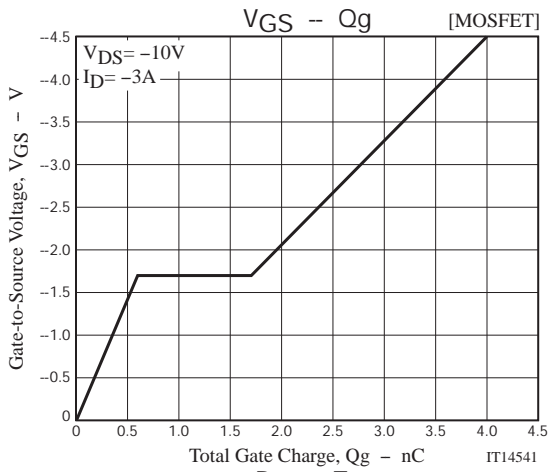
Switching Time Test Circuit (MOSFET)

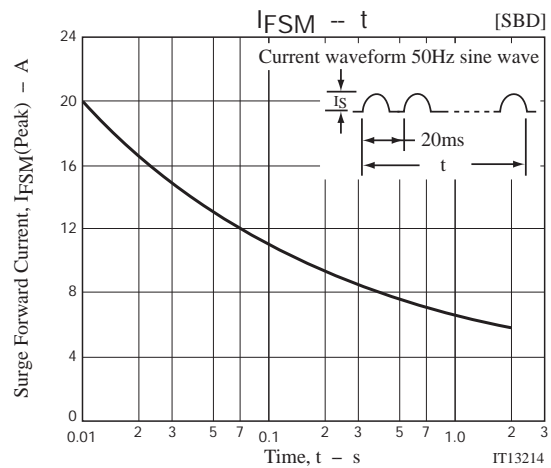
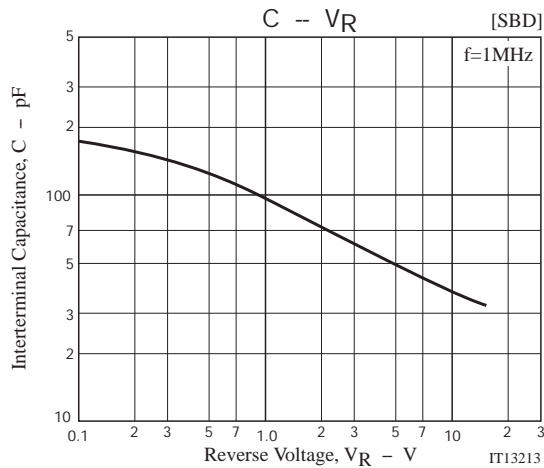


trr Test Circuit (SBD)









Note on usage : Since the EMH2801 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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